

**REMARKS**

Applicants' representatives thank the Examiner for the phone conversation on August 19, 2009, where it was clarified that claim 6 was objected to under 37 C.F.R. § 1.75(c), because it was not clear whether claim 6 depended from claim 4 or whether the "4" was deleted along with the "or 5" in the Amendment filed on May 11, 2009.

Claim 1 has been amended to recite that "a phosphorous oxide is contained within the inorganic oxide support in an amount of 15% by weight or less." Support for this amendment can be found at, for example, page 11, lines 1-23 of the specification.

Claim 6 has been amended to clarify that this claim depends from claim 4.

Claims 1, 2, 4, 8 and 11-12 have been amended to improve their form.

Claims 1, 2, and 4-16 are pending in the present application.

At Paragraph No. 4 of the Action, claim 6 is objected to under 37 C.F.R. § 1.75(c) as allegedly being of improper form for failing to further limit the subject matter of a previous claim. Namely, the Office Action states that it is not clear whether claim 6 depends on claim 4 or depends on another claim that is not referenced.

Applicants respectfully submit that the amendment to claim 6 overcomes this rejection. For example, it should be clear that present claim 6 depends from claim 4.

At Paragraph No. 6 of the Action, claims 1-2 and 7-11 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent Application Publication 2003/0173256 ("Fujikawa").

The Examiner cites Fujikawa as disclosing all of the requirements of claim 1, except the Examiner notes that the word "containing" is open to two interpretations. Further, the Examiner

acknowledges that Fujikawa does not disclose “containing” in the sense of “having within itself or having as component or constituent parts.”

Applicants respectfully submit that the amendment to claim 1 overcomes this rejection. For example, claim 1 has been amended to recite that the phosphorous oxide is contained within the inorganic oxide support. Thus, claim 1 is not anticipated by or rendered obvious by Fujikawa.

Reconsideration and withdrawal of the § 102(b) rejection based on Fujikawa are respectfully requested.

At Paragraph No. 15 of the Action, claims 1-2 and 4-16 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Fujikawa in view of U.S. Patent No. 4,066,572 (“Choca”).

Regarding claim 1 and the claims dependent thereon, the Examiner cites Fujikawa as disclosing all of the requirements of claim 1, except the Examiner acknowledges that the reference does not “explicitly disclose that the catalyst support contains a phosphorous oxide in an amount of 15% by weight or less on the basis of the support, wherein contains means having within itself or having as component or constituent parts.” The Examiner asserts that it would have been obvious to one of ordinary skill in the art to modify the catalyst of Fujikawa with the support of Choca in order to increase the size of the pore diameter of the support so that desulfurization activity may increase by permitting diffusion of sulfur catalysts into the catalyst pores.

Further, referring to Paragraph Nos. 25 and 26 of the Action, the Examiner acknowledges Applicants’ argument submitted in the Amendment filed on May 11, 2009, that combining Fujikawa with Choca would cause the pore size of the catalyst support to increase beyond the

pore size permitted by Fujikawa. In response, the Examiner asserts that there is no evidence that combining Fujikawa with Choca would necessarily result in an increase beyond the pore size permitted by Fujikawa. For example, the Examiner basically argues that the average pore diameter in Fujikawa is 75 Å or less, such that adding phosphorous oxides to the catalyst support of Fujikawa would not necessarily increase the average pore diameter to over 95 Å.

Applicants respectfully traverse for at least the following reasons.

There is no teaching, suggestion, or motivation to modify Fujikawa with Choca. As a brief summary, in the Amendment filed on May 11, 2009, Applicants pointed out that Fujikawa teaches away from the addition of phosphorous oxide of Choca to the catalyst (support) of Fujikawa. Specifically, the references teach away from such a combination, because (1) Choca teaches that “average pore diameter increases with the amount of phosphorous introduced into the composition in its preparation” (see Abstract and column 2, lines 35-37 of Choca), and (2) “[w]hen the average pore diameter thereof is larger than about 95 Å, the catalyst has a reduced internal-surface area of the pores . . . hence has a reduced effective specific surface area and reduced activity.” See paragraph [0070] of Fujikawa.

In response, referring to Paragraphs No. 25 and 26 of the Action, the Examiner asserts that there is no evidence that combining Choca would cause the pore size of the catalyst to increase beyond the pore size of Fujikawa.

Applicants respectfully submit that the Examiner may misunderstand Applicants' argument. The argument is not that phosphorous oxide cannot be added to an inorganic oxide support to form a catalyst having pores with an average pore diameter of less than 95 Å. Indeed, claim 1 refers to Applicants' discovery that phosphorous oxide can be added to an inorganic

oxide support in an amount of 15% by weight or less to form a catalyst with a mean pore diameter of as little as 50 Å.

Instead, Applicants' argument is that, at the time of the invention, a person of ordinary skill in the art would not have found it obvious to combine Fujikawa with Choca, because these references teach away from (i.e., discourage) the addition of phosphorous oxide to the inorganic oxide support of Fujikawa to increase pore size.

The disclosure of Fujikawa already provides a catalyst having an average pore diameter of 60 to 120 Å. See paragraph [0042] of Fujikawa. However, as discussed above, Fujikawa also teaches that to increase the average pore size above 95 Å would result in lower catalyst activity. Therefore, Applicants respectfully submit a person of ordinary skill in the art would not be motivated to add phosphorous oxide to the catalyst of Fujikawa to increase pore size, as suggested by the Examiner, because Fujikawa already discloses a catalyst optimized with respect to average pore size. In other words, Fujikawa alone teaches that a person of ordinary skill in the art would not want to increase the mean pore diameter beyond that already disclosed by Fujikawa. For at least this reason, there is no motivation to modify the catalyst of Fujikawa with Choca to increase the size of pore diameter of the support, as suggested by the Examiner.

Further, Choca teaches that the addition of phosphorous oxide to an inorganic oxide support will increase average pore diameter. Therefore, a person of ordinary skill in the art would be discouraged from adding phosphorous oxide to Fujikawa, because a person of ordinary skill in the art would have thought that doing so would probably just increase the pore diameter in a way that would likely decrease catalyst activity.

Thus, Applicants' discovery that phosphorous oxide can be incorporated into an inorganic oxide support to increase catalytic activity is all the more non-obvious, because Applicants' discovery contradicts these teachings in the field at the time of the invention.

At Paragraph No. 28 of the Action, the Examiner explains that Applicants presentation of unexpectedly superior results compared to an exemplary catalyst of Fujikawa is unpersuasive, because the argument does not show unexpectedly superior results compared to a catalyst exemplary of "Fujikawa et al modified by Choca."

Applicants respectfully submit that Applicants are not required to compare the presently claimed invention with subject matter that does not exist in the prior art. See MPEP § 716.02(e)(III) (Requiring applicant to compare claimed invention with a suggested combination of references relied upon in the rejection of the claimed invention "would be requiring comparison of the results of the invention with the results of the invention." Citing *In re Chapman*, 357 F.2d 418, 148 USPQ 711 (CCPA 1966)).

In addition, Applicants respectfully point out that MPEP § 716.02(e)(I) specifically instructs that the presently claimed invention may be compared with evidence that is as close as or closer to the claimed invention than the prior art relied upon.

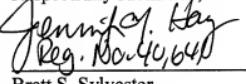
Thus, Applicants respectfully submit that the showing of unexpectedly superior results in the Amendment filed on May 11, 2009 is proper and when Applicants respond to a § 103 rejection, "[o]ffice personnel should consider all rebuttal arguments and evidence presented by applicants." See MPEP § 2145. Therefore, Applicants request that this showing of unexpectedly superior results be fully considered on the merits.

In view of the above, Applicants respectfully submit that claims 1-2 and 4-16 are non-obvious, because at the time of the invention there was no motivation to combine Fujikawa with Choca as suggested by the Examiner.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
Jenny C. Bay  
Reg. No. 40,640

 Brett S. Sylvester  
Registration No. 32,765

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON DC SUGHRUE/265550

65565  
CUSTOMER NUMBER

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